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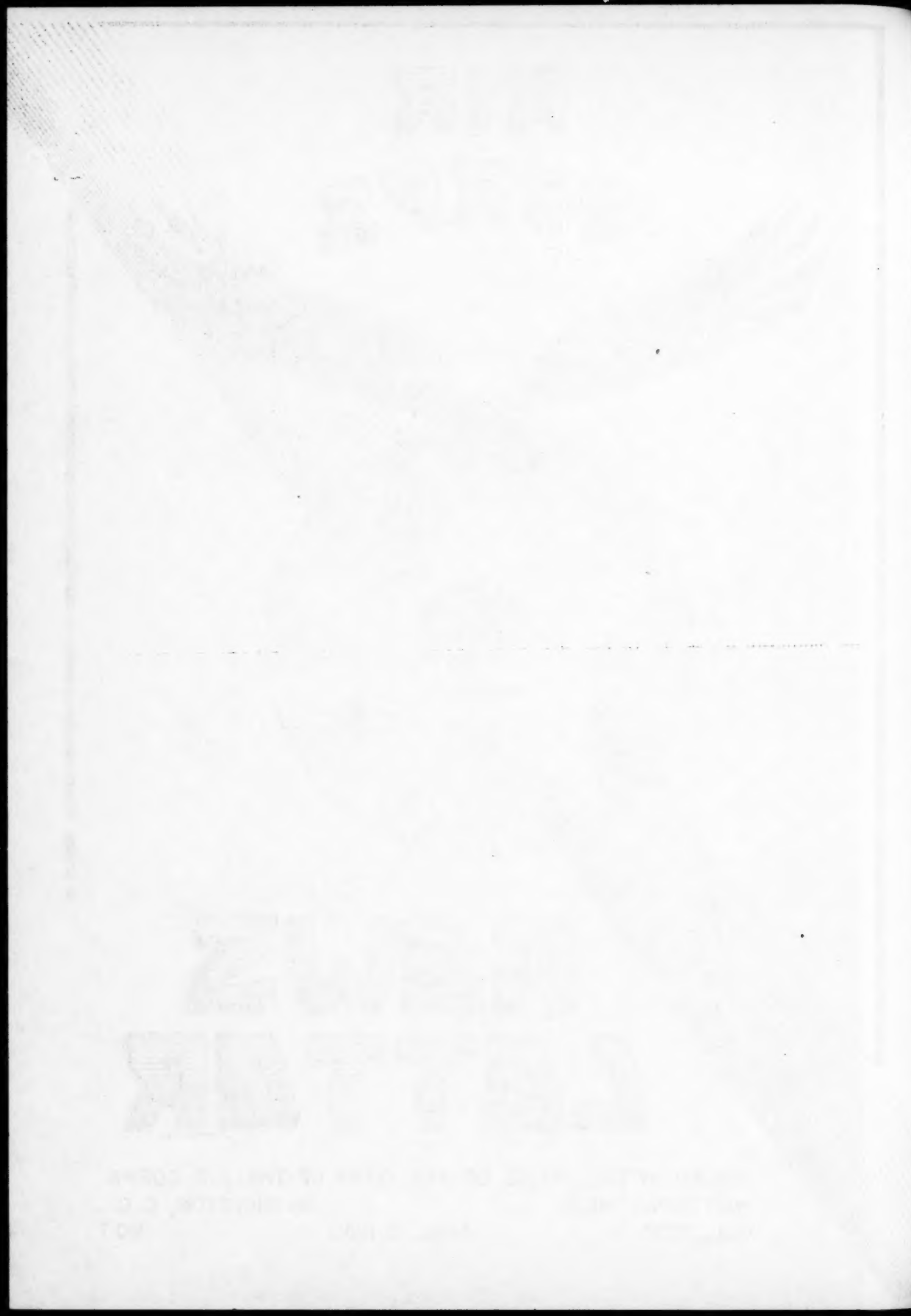

VOL. XVIII AIR CORPS NEWS LETTER NO. 7.

Information Division, Air Corps — April 15, 1935 — Munitions Building, Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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PROPELLER FAILURE UNDER NEW FORM OF ANALYSIS

By Lieut. H. H. Couch, Air Corps

A strange problem presented itself to the Air Corps Materiel Division during 1934 in the repeated failure, both in military and commercial service, of metal propellers built from materials whose endurance stresses were well above the computed stresses under which failure in operation occurred. For example, aluminum alloy propellers with an endurance limit of 12,000 pounds per square inch failed under computed operating stresses of 3,000 pounds per square inch. Likewise, hollow steel propellers, the endurance limit of whose material was 40,000 pounds per square inch at the point of failure, had failed at computed stresses of 15,000 pounds per square inch. Here was a technically puzzling situation, the solution of which offered to engineers something of a problem. Clearly, the problem was not one of simple stresses.

The question arose as to whether some form of vibration could possibly be responsible for these failures, and it was decided that the only determination of this point lay in a study of the various types of vibration possible in aircraft propellers. This study the Materiel Division decided to undertake.

A propeller may be defined as a tapered twisted beam made up of thin airfoil sections. The blade deflects easily about a neutral axis that is almost parallel to the chord of the airfoil section and is rigid about an axis at right angles to the neutral axis. For the excitation of vibration, the following plan was tried:

The assembled propeller was suspended in shock absorber cord of such elasticity that a low natural frequency would result. A rotating eccentric weight driven by a small air motor was mounted on the front of the propeller hub so that the plane of rotation of the weight passed through the center line of the propeller blade. The speed of the motor was then gradually increased until violent vibration resulted.

Under the vibration forces at various frequencies it was found that the action of the blades was similar to that of reeds. The tips showed a large amplitude of movement, while certain stations or nodes on the blades remained practically stationary. These nodes were located by a unique method. Fine wood dust or sand was shaken on the blades and results noted. When a resonant vibration frequency of the blade was reached, the dust or sand completely worked off the blades except at the stationary nodal points where a narrow band of it remained. Thus were the areas of weakness definitely located. By vibrating the blades for several hours with the air motor, tip failures occurred that were almost identical with those obtained in flight. These failures invariably occurred in the near vicinity of the node nearest the tip.

A study of all Air Corps propeller failures since 1929 revealed the fact that most of the failures occurred on engines having crankshafts in which the natural frequency at the crankshaft could be excited by engine explosion frequency. An instrument developed by F.L. Prescott, of the Materiel Division, has proved very valuable for determining resonant crankshaft conditions. A crankshaft having a bad torsional whip or vibration first manifests itself in galled rear cones. If the propeller blade has a resonant frequency that coincides with the crankshaft frequency the result is usually a tip failure in the near vicinity of the node nearest the tip. These failures usually occur between 50 and 150 hours of operation.

In cases where the blade resonance frequency does not coincide with the frequency of a crankshaft that is operating under bad resonant conditions, the result is usually a blade failure near the hub, a hub failure, or a crankshaft failure. Resonant frequency in the blades can also be excited by blades passing too near objects such as a mud guard or the side of the fuselage.

A method of determining the type and frequency of vibration of the blades and the actual stresses in the blades under flying conditions is being developed by Materiel Division engineers. With the knowledge now at hand it would have been possible to predict practically all of the failures of service type propellers that have occurred in the Air Corps since 1929. In several cases it has been necessary to change propellers and restrict engines to a specified range of operation to prevent failure.

Every possible effort is being made at

the present time to obtain new equipment on procurement that will be free from dangerous crankshaft and propeller vibrations in the normal operating ranges of engine r.p.m. used in flight.

A more detailed study of the types of vibration possible in aircraft propellers is contained in Air Corps Information Circular No. 683.

Editorial Note: Lieut. H.H. Couch, the author of the above article, under whose direction the method of vibrational testing of propellers was originated and developed, has been at Wright Field with the exception of a few months since 1929, when he reported to attend the Air Corps Engineering School. Graduating in 1930, he was assigned elsewhere for a short period, and returned to the field in December of the same year. He served as an American representative to the Handley Page Co. in England during the World War, and saw flying service elsewhere in Europe. He holds the degree of B.S. in Aeronautical Engineering from the University of Michigan (1922) and the Army ratings of airship pilot and balloon observer. His contribution to aeronautical science in the new test methods described above is among the important ones of recent years.

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FRANCE LEANS TOWARD MULTI-PLACE PLANES

In a recent lecture to air reserve officers taking an advanced training course, General Denain, French Air Minister, stated that for reasons of economy, the Air General Staff adopted the idea of a multiplace combat plane. "There is no doubt that after six months of war a very great specialization in the various kinds of aviation would be attained, as the question of money, in time of war, does not matter," the General said, adding that for the present the French had the multi-purpose plane fulfilling the requirements of the program of November, 1933. For interception, they have the gun-engine single-seaters with a speed of over 400 Km/h (248.5 m.p.h.).

General Denain then referred to the idea, inspired by the Navy, of a "contact" plane - multi-seaters - capable, in view of their special construction, of making contact with enemy units marching against an objective without attacking them (even refusing combat), but which, thanks to their speed, would keep not only land stations but also interception units taking off a little later, informed of the enemy's moves via radio.

General Denain stated that the Martin bomber has a speed of 325 Km/h (192 mph) at 1500 m., but has not the same ceiling as the Bloch 200 (whose speed is 295 Km/h (183 mph), nor its complete defense. The Air Minister said France would have 200 Blochs by the end of 1935, which would be superior to the German Junkers 52 and to the American Orions. The Bloch carries 1100 Kg. (2424 lbs.) of bombs for a distance of 1000 Km. (621.37 miles).

The Minister then spoke of recent orders to be delivered during the year, mentioning the Farman 221 night bombers, the Amiot 140 multiple fighters, the Breguet 41 combat planes, the Devoitine equipped with a cannon, the Potez 54 combat plane, the Mureaux reconnaissance type and the Liore 205 bombers.

"At the end of 1935, the Air Army will have 600 modern planes, and at the end of 1936, 1,000 first-line planes, as follows: 350 bombers, 340 fighters, and 310 information planes. By comparison with the present number (given as 1850), the speed and radius of action will have been doubled."

General Denain said the personnel would be trained at the Versailles Air School. The lowering of age limits will permit promotion of younger officers to the higher ranks. The new organization of the reserves and the perfecting of present training methods have already given satisfactory results. From 1936 on, the personnel of the reserve squadrons will be mobilized with the unit to which they are attached for training. A statute for reserve personnel will be based on that for regular air personnel.

France will be divided into three air regions (Paris, Tours and Lyons), plus a fourth one in North Africa (instead of the present five). This will facilitate general organization already perfected by the change from 11 regiments to 25 wings.

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INSTRUMENT FLYING AT OLMSTED FIELD

The one airplane at Olmsted Field, Middletown, Pa., which is completely equipped for instrument flying, a BT-2B, has been very much in demand since the advent of warm spring weather. This airplane is equipped with an instrument flying hood, a complete set of flight instruments, intercockpit phones, and two-way radio, providing all the necessary facilities for navigation by instruments.

This station is fortunate in that a Department of Commerce radio beam is located seven miles from Olmsted Field, one beam of which extends directly over the field. Many of the pilots of this station have attained a degree of proficiency in navigation by radio such that they are able, while under the hood, to proceed to the field from any given point within range of the radio beacon, close the throttle while still under the hood, then open the hood and glide to a landing without further use of the engine; this, despite the fact that Olmsted Field is 7 miles distant from the radio beacon.

OUR NEW ARMY POST

By Captain H.B. Nurse, Q. M. C.

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With the development and expansion of the Army Air Corps, new Posts for the housing and training of this highly technical branch of the armed service have been made necessary. Invariably, these Air Posts have, through necessity of topographical requirements, been developed along entirely new lines, and in no sense are they a continuation of, or addition to, an existing, and in many cases, antiquated, Army Post, as so often occurs in the expansion of other Line Organizations.

Eliminating the necessity of building to harmonize with existing facilities, it has been possible to eradicate previous standards of an antiquated origin, and start from the ground up along an entirely new line of thought. The Quartermaster Corps entered into these new problems with enthusiasm and a determination to develop along the line of most modern "city planning" a group of new Air Posts, which are fast proving to be models worthy of admiration from the lover of good architecture, as well as the efficient and most exacting municipal engineer.

In each case the location of sites for these new Posts has been most admirably selected for the purpose intended; especially is this true in the case of Hamilton Field, the Army's newest Air Field.

To the north of the sparkling waters of San Francisco Bay lies a dreamy and enchanted playground where, for over a hundred years, people who love to live have found escape from the busy world, and with their precious heritage of gay leisure the present population of this romantic spot fairly radiates hospitality quite reminiscent of the old Spanish Grandee, which contributes a charm and an appeal hard to resist. It is within this most favored setting that Uncle Sam has selected a site for the building of Hamilton Field.

In the heart of Marin County, only one hour from gay San Francisco, the world's most cosmopolitan city, lie the wood-studded hills bordering the acreage where, within the past two years, has been built this most modern Air Field, an accomplishment of the Construction Division of the Quartermaster Corps. It is the charm of this place which caused the Chief of Air Corps, on his recent tour of inspection, to exclaim with unrestrained enthusiasm, "This is the most beautiful Post in the entire world!"

Hamilton Field originated with a plan launched in 1928 by the War Department to establish an Air Field for a bombing group at some point on the West Coast.

Early in 1929, prospective cities were inspected by a board of officers, and of the various sites suggested, the one located in Marin County was finally approved, principally because of its central location between our Canadian border and our Mexican border. Other reasons contributing toward the selection of this site were the facts that it is sheltered from the sea by a low range of mountains and is far enough inland to be free from gun-fire of an enemy's fleet; that it is adjacent to the principal manufacturing district of the West Coast; that it is remarkably free from fog, the weather being never too hot and never too cold, which allows a maximum number of flying hours throughout the year.

On July 3, 1930, President Hoover signed the "Kahn" Bill which provided the initial appropriation of $1,412,117.87 for construction.

Captain Nurse arrived in Marin County on April 28, 1931, to assume the duties of Constructing Quartermaster in charge of the planning and the construction of this Air Field. Considerable delay was caused in securing title to the property, but through the untiring efforts of the public-spirited business men of Marin County, by whose patriotic action the tract of land was donated, the title was finally cleared up and this new Air Field became a reality when on March 17, 1932, the site became the property of the United States, as the deed was turned over to the War Department.

This delay, although aggravating at the time, proved a blessing in disguise, in that it gave ample time to thoroughly plan every facility and iron out inequalities that are so often encountered in vast engineering problems of this nature where speed is paramount.

The new Air Base was officially designated as "Hamilton Field," in honor of First Lieutenant Lloyd Andrews Hamilton, Seventeenth Aero Squadron.

Lieutenant Hamilton was awarded the Distinguished Service Cross by the United States Government for extraordinary heroism in action at Varssonaere, Belgium, August 13, 1918. Leading a low bombing attack on a German airdrome 30 miles behind the lines, he destroyed the hangars on the north side of the airdrome, and then attacked a row of enemy machines, setting fire to three of the German planes. He then turned and fired machine gun bursts through the windows of the Chateau in which German pilots were quartered, twenty-six of whom were afterwards reported killed. Lieutenant Hamilton was later killed in action near Lagnicourt, France, on August 26, 1918.

On September 26, 1933, another incentive was given to the construction program when an additional amount of

$3,462,183.41 was provided under the Public Works appropriation, making a total appropriation to date of $4,874,302. Hamilton Field provides accommodations for 79 commissioned officers, 70 noncommissioned officers, and 800 enlisted men. The reservation comprises a total of 928 acres. Approximately 160 acres lie in the form of a low range of hills, which make an ideal residential section. Beyond this range of hills and San Pablo Bay, lie 768 acres of flat, level land, which is utilized for a landing field approximately one mile square. This low, level land is two feet below mean low tide, but is well protected by a substantial levee that has been in existence for over thirty years.

Originally the waters of San Pablo Bay lapped the foothills that now form the residential area, but during the placer mining operations in the Sierra Nevada Mountains, mine tailings were swept down the American and Sacramento Rivers through Jarquinez Straits and swirling into the more placid water of the Marin shores, they settled and gradually built up this area, which later on some enterprising individual reclaimed by the construction of a levee at its outer edge and by pumping the excess water up into the Bay.

On entering Hamilton Field, one passes down a wide palm-lined avenue, leading to Headquarters, established in a building which is a replica of the old missions of early California; with its deep arched loggia, one might expect to catch a glimpse of the dark-robed figure of a Spanish Padre strolling with prayer-book in hand, and at eventide to hear the pealing of bells calling the faithful to the hour of vespers.

Just beyond Headquarters, one will find the technical building, all in gleaming white, relieved by the bright green of abundant semi-tropical shrubbery. Modern Barracks, each to house two hundred men, and a long double row of Hangars of gigantic proportion, are the last word in appointment.

Literally, Hamilton Field is a little Spanish Village just sprung from the hills. Here, beauty, comfort, and utility have been combined, looking toward the health, social intercourse, and contentment of its inhabitants. Homes built of individual character, without the monotonous similarity of the usual army post, tree-lined boulevards, shaded lawns, and the informal but attractive winding of streets through the natural contours of the hills lend charm.

The houses, most modern in appointment, yet truly Spanish in character, are not placed in stiff and dignified rows, but informally scattered so as to take advantage of the wonderful vista of San Pablo Bay to the east, across whose placid waters the Contra Costa shores are visible, or to the West, overlooking the majestic Coast Range Mountains, where the lofty peak of Mount Tamalpais is superimposed.

As a fitting crown to a high promontory in the residential area, a rambling building, that might have been the hacienda of some early Spanish Grandee, is the Officers' Club, with its complete facilities, including lounge rooms, game rooms and a model kitchen. Occupying one rambling wing are several suites of rooms where visiting officers and their families may be very comfortably put up. Within the environments of the spacious patio surrounded by the wings of this building, one listens for the strumming of guitars played by some bold Caballero to his dark-eyed Senorita; though gay fandango and the fiesta here have given way to the more modern dancing, yet romance and gaiety still abound.

Plants and shrubs have been propagated in our own nursery, established at the beginning of the project.

When the newly assigned officer arrives at Hamilton Field with his family, he will find not only a modern and up-to-the minute home awaiting him, but also a completely beautiful lawn, with a profusion of shrubs and flowers, for which California is so well famed. In fact, nothing has been spared by the Quartermaster Corps in making this army post a real home for its occupants.

Additional information on Hamilton Field, furnished by the News Letter correspondent, is given below, as follows:

Hamilton Field is a seaport as well as an airport. Three miles of canal connect it with the deep water of San Pablo Bay which gives access to the Pacific through the Golden Gate. This canal was dug as part of the $5,000,000 construction project at the Marin County field. Captain Howard B. Nurse, Construction Quartermaster, believes that this barge canal will save the government thousands of dollars, due to the fact that the government receives water rates from the railroad which hauls freight into the post. Otherwise the canal might be used at any time as there is small wharfage at the terminus near the boathouse.

The Hamilton Field Navy has a crew of four men from the 70th Service Squadron. Sergeant James M. Botalen and Privates Lawrence Brogan, Ellis A. Larsen and Thomas Dickman the three boats. The J-40 is used as a crash boat to rescue personnel of aircraft who may have the ill fortune to nose dive into the Bay. The P-7 is in drydock. A sea sled with a reputed speed of 35 miles per hour is the only fast water transportation. The other two boats will make about 15 miles per hour.

The whole setting of Hamilton Field is redolent of early California. Not only the architecture of the buildings but also the landscaping shows the influence of the early Dons. The plant life

selected includes 6,000 trees of the early native flora. Among these are conifers, ash, palms, walnut and bamboo. Second Lieut. Robert E. Cron, Jr., Asst Const. Q.M., is in charge of this work.

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INSTRUMENT FLYING IN HAWAII

In September, 1934, at the direction of the Wing Commander, Colonel Delos C. Emmons, a Wing Instrument Flying School was established for all pilots stationed in the Hawaiian Department. Realizing the importance of instrument flying training to Air Corps officers, Colonel Emmons desired that the proficiency of the pilots in the 18th Composite Wing in this type of flying be brought to the highest possible standard. He selected Lieut. Elmer J. Rogers, Jr., of the 5th Composite Group, Luke Field, to direct this school, because of that officer's past experience as instructor in instrument flying.

Lieut. Rogers assisted in the early experiments which led to the establishment of the Instrument Flying School at Brooks Field, Texas, in 1929, taking charge of this school at a later date, and thereafter establishing such schools at other posts, including Chanute and Mitchel Fields, and lecturing on the subject to a number of National Guard Squadrons.

It was Colonel Emmons' plan that one pilot be selected from each of the tactical squadrons of the 5th Composite Group at Luke Field and from each of the tactical squadrons of the 18th Pursuit Group at Wheeler Field, to act as assistants to Lieut. Rogers and as the Instrument Flying instructors for their respective squadrons.

Considering officers who possessed the qualifications and experience which made them best fitted to act as instructors in this type of flying, Lieut. Rogers selested as his assistants Lts. Gilkey, Morrow, Starkey and Ladd, of the 5th Composite Group, and Lts. Winn, Nelson and Keillor of the 18th Pursuit Group.

Going a step beyond the requirements as set forth by the Chief of the Air Corps for this phase of training, Col. Emmons set as the goal to be attained by this Wing, 20 hours of instrument flying for each pilot. To date, every pilot who had not had a basic course in instrument flying has received a 10-hour basic course, completed within 42 days, as required by Air Corps Circular 50-1, under the guidance of a thoroughly qualified instructor, and has been given a diploma, signed by Colonel Emmons, attesting to this fact. Every pilot who had received such a basic course at some other station received a refresher course, varying in length from 30 minutes to 5 hours.

Toward the accomplishment of the goal of 20 hours per pilot for the Fiscal Year, one squadron has already completed that amount; two other squadrons are ahead of schedule, and the remaining squadrons have progressed sufficiently far to warrant the assumption that they will have completed this amount before July 1st next.

The officers of the Wing have been eager to take these courses of instruction, and in some instances officers who had already received a basic course at another station requested permission to undergo a second course of instruction. It is due to this fact, perhaps more than to any other, that the progress in the Wing School has been so gratifying.

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GENERAL SIMONDS INSPECTS LANGLEY FIELD

The Deputy Chief of Staff, Major-General George S. Simonds, arrived at Langley Field, Va., from Washington in a Ford Tri-motor plane on March 27th. Immediately following his arrival, an aerial review was staged in his honor by the Second Wing, General Headquarters Air Force, after which an 18-plane Pursuit squadron, led by 1st Lieut. C.G. Goodrich, performed a spectacular combat drill as a team of elements, team of flights and squadron team in "String" formation.

General Simonds departed the following day to continue his inspection trip of United States Army Posts, the proposed route out of Langley Field being: Pope, Maxwell and Barksdale Fields.

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TACTICAL TRAINING IN HAWAII

"Of a distinct advantage to the flying personnel of the 18th Pursuit Group," says the News Letter Correspondent, "is the opportunity we have of frequently participating in Field Exercises and Maneuvers of the Hawaiian Division. The Division, itself, enjoys the distinction of being the only completely assembled organization of that designation in the United States Army.

During the Maneuvers in December, 1934, the entire Division took the field for the period of a week, conducting comprehensive problems under actual field conditions.

The Air Force was called on to perform both day and night missions, calling for Pursuit, Attack, Bombardment and Observation aviation. Due to the heavy tropical growth along the trails and the excellent instruction previously received by personnel of the Division with reference to concealment, the problems presented were most difficult. However, the training received was most instructive, and many valuable tactical lessons

were learned.

In view of the desire of the Chief of Staff of the Army to familiarize the Air Corps with the functioning of the various ground branches of the military service to a greater extent than now practiced, few stations are better equipped for such an excellent opportunity than is Wheeler Field.

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PRAISE FOR 41st DIVISION AVIATION

Praise of an exceptional nature was given the 41st Division Aviation, Washington National Guard, by Major-General Paul B. Malone, recently appointed Ninth Corps Area Commander, on his inspection of military units at Spokane, Wash.

"This is the finest National Guard aviation setup that I have ever seen," Gen. Malone stated. He was especially pleased with the new $102,000 hangar at Felts Field, about which he inquired particularly, especially into the finances necessary to its construction. He inspected Felts Field closely, asking many questions about the size of the airport, prevailing winds and drainage.

During the course of his hour's visit at the airport, he was told about Spokane's ambition to secure a Regular Army Air Corps depot under the National Air Frontier Defense program being considered by Congress.

General Malone indicated a real interest in the preparation of accurately scaled air maps for fire-control purposes, and stressed particularly the importance of contours on these maps.

His query as to whether the organization had prepared such a map for the 41st Division encampment in June at Fort Lewis and Camp Murray was answered in the affirmative.

At a banquet in the evening, more than 300 citizens of Spokane honored the General with their presence and heard a most stirring presentation of military importance at this time.

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FLYING CADET STILL MISSING

Flying Cadet Milton A. Lampl, Air Corps, mysteriously disappeared during the night of March 10th, while en route to Selfridge Field from Cleveland Airport, Cleveland, Ohio, on an avigation training flight.

Cadet Lampl had departed from Selfridge Field on March 9th, flying to Chanute Field, Ill., Schoen Field, Indianapolis, Ind., and to Cleveland, where he remained overnight. Departing from Cleveland at about 7:00 p.m. the next day, with weather conditions indicated as fair. The ceiling was about 800 feet and it was raining, but conditions were indicated as gradually becoming better toward Detroit. Shortly following his departure, the weather became very bad, and at Selfridge Field a heavy ground fog set in. The P-26 flown by Cadet Lampl was equipped with two-way radio and night flying apparatus, but nothing was received from him indicating that he attempted to use his radio to get in touch with the command set at Selfridge.

At about 10:00 p.m., Lieut. Harlan T. McCormick, the Station Operations Officer, broadcast the following message: "Fly West and bail out." Whether Cadet Lampl received this message is doubtful, but the entire First Pursuit Group spent two whole weeks scouring the countryside around Cleveland and between that city and Selfridge Field, and as far west as Kalamazoo, Mich., in the hope that some trace of the plane might be found. Thus far, however, the search has proved fruitless. The Group continues to dispatch airplanes to run down clues phoned to the field.

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REORGANIZATION UNDER WAY AT MARCH FIELD

Much of the time and effort of the personnel at March Field, Riverside, Calif., has recently been spent in reorganizing to meet the requirements for the GHQ Air Force. Unlike most stations, the new GHQ set-up changed the basic Air Force designation of the principal organizations at this field. The 17th Pursuit Group was changed to the 17th Attack Group.

In addition to organizing the 1st Wing Headquarters, work has now been completed in reassigning personnel to the new tactical units composing the 17th Attack Group. The only things remaining to complete the change are the confirmation of orders of officers for the various command and staff functions and receipt of the new planes with which the new Attack squadrons are to be equipped. Enthusiasm for the change has been somewhat dimmed by notification that the new Northrup Attack planes will not be ready for delivery at March Field until some time in March, 1936. In the meantime, the present equipment (Boeing P-26's) are rapidly being sent to the Boeing factory, where flaps are being installed to reduce landing speeds.

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GENERAL FOULOIS VISITS RANDOLPH FIELD

Major-General Benjamin D. Foulois, Chief of the Air Corps, arrived at the Air Corps Training Center on March 29th and spent the next three days inspecting Randolph and Kelly Fields. His many friends were glad to welcome him again.

On Sunday morning, General Foulois attended a sacred concert in the Randolph Field chapel, given by 44-voice choir of the Texas Lutheran College. After the services he inspected the chapel and expressed his satisfaction.

BRIGADIER-GENERAL HENRY H. ARNOLD

Twenty-four years ago this month, a young Army Lieutenant arrived at the thriving little city of Dayton, Ohio, on a mission which proved to be the turning point in his army career. He had been ordered by the War Department to proceed to Dayton to undergo instruction at the flying school conducted by the Wright Brothers.

Today this same officer, Brigadier-General Henry H. Arnold, Air Corps, occupies a very important position in the military service, being the commander of the First Wing of the General Headquarters Air Force at March Field, Riverside, Calif.

General Arnold is an aviation pioneer in the true sense of the term. When he reported at Sims Station, now the site of the Air Corps Depot at Fairfield, Ohio, he found a barn-like structure which housed several of the early Wright biplanes, with their 40 h.p. engines, their two propellers in tandem, their two seats in front, side by side, and their three control sticks. His contemporaries in those early days of aviation were such well known pioneer aviators as Walter Brookings, Ralph Johnstone, Arch Hoxie and Arthur L. Welsh, comprising the original flying team of the Wright Brothers; Lincoln Beachy, the dare-devil; Claude Graham White, the Englishmen; Louis Paulhan, Jules Vedrines and Hubert Latham, the Frenchmen, and last, but by no means least, Lieut. Benjamin D. Foulois (now Major-General and Chief of the Army Air Corps).

During his first year as an aviator, General Arnold made 140 flights for a total duration of 29 hours, a record to be proud of in those early days. The following year the number of flights increased to 209, and he garnered new laurels for the miniature Air Corps by initiating many of the early aviation developments and finally winning the Mackay Trophy. He was the first officer to win this Trophy and, after a lapse of 22 years, won it again.

General Arnold won the Trophy for 1912 by flying over the triangle Washington Barracks, D.C., Fort Myer, Va., and return to College Park.

In the summer of 1934, General Arnold was in command of the flight of ten B-10 Martin Bombers, flying from Washington, D.C. to Fairbanks, Alaska, and return. He was awarded the Mackay Trophy for that year for his leadership on this expedition.

Born at Gladwyne, Pa., June 25, 1885, General Arnold, after graduating from the United States Military Academy, West Point, N.Y., June 14, 1907, was appointed a second lieutenant of Infantry. He was promoted to 1st Lieutenant on April 10, 1913; Captain, May 20, 1916; Major, July 1, 1920; Lieut.-Colonel, February 1, 1931; and Brigadier-General, March 1, 1935.

General Arnold graduated from the Army Industrial College in 1924, and from the Command and General Staff School, Fort Leavenworth, Kansas, in 1929.

Prior to his detail to the Aviation Section, Signal Corps, in 1911, he served successively with the 9th, 13th and 3rd Infantry regiments. During two years of his service with the Infantry, he was on duty in the Philippines where he conducted a topographical survey of the Island of Luzon.

Following the completion of his flying instruction, General Arnold was assigned to duty at the Signal Corps Aviation School, established in 1911 at College Park, Md., the government having leased a thousand-acre tract of land at that place for use as a flying training school. He was with the school when it was transferred to Augusta, Ga., in the fall, and returned to College Park the following spring.

In August, 1912, he participated in the Regular Army and National Guard Maneuvers in the States of New York and Connecticut, and established several aeronautical records. On June 1st of that year, he established a new altitude record when he piloted a Burgess-Wright airplane to 6,540 feet.

During the latter part of 1912, General Arnold was on duty at Fort Riley, Kansas, observing field artillery firing from an airplane. He was the first military aviator to make use of radio to report his observations. His next assignment was in the Office of the Chief Signal Officer in Washington, and from there he was transferred to the newly established Aviation School at San Diego, Calif., where he served for nearly a year in the capacity of Supply Officer.

Early in 1917, General Arnold organized and commanded the 7th Aero Squadron in the Panama Canal Zone. In April of that year, following America's entry in the World War, he was assigned to duty in Washington and placed in charge of the Information Service of the Aviation Division of the Signal Corps. Upon the creation of the Office of the Director of Military Aeronautics, he was assigned to duty as Assistant Executive. In February, 1918, he was appointed Executive Officer and later as Assistant Director of Military Aeronautics, a position which placed him in direct charge of over thirty flying schools, some 15,000 Air Corps officers and 125,000 enlisted men.

During the early part of 1918, he went overseas on an inspection tour of avia-

tion activities. From 1919 to 1924 he was stationed on the Pacific Coast, the positions he held during that period being District Commander, Western District; Commanding Officer, Rockwell Field, Coronado, Calif.; Air Officer, 9th Corps Area, and Commanding Officer of Crissy Field, Presidio of San Francisco, Calif.

It was during General Arnold's period of duty on the Pacific Coast that a number of very important Air Corps activities were initiated, such as the aerial patrol of the forested areas in California and the Great Northwest, and the refueling duration and distance flights of Captain Lowell H. Smith (subsequently leader of the Air Corps Around-the-World Flight) and Captain John P. Richter.

Following the completion of his course of study at the Army Industrial College, General Arnold, early in 1925, was assigned to duty as Chief of the Information Division, Office of the Chief of the Air Corps, Washington. Transferred to Marshall Field, Fort Riley, Kansas, in March, 1926, he was in command of Air Corps troops at that field until the summer of 1928, when he was assigned to duty as student at the Command and General Staff School at Fort Leavenworth, Kansas. Following his graduation in June, 1929, he was assigned to duty as Commanding Officer of the Fairfield, Ohio, Air Depot also as Chief of the Field Service Section, Materiel Division, Wright Field, Dayton, Ohio. On July 1, 1930, he was appointed Executive Officer of the Materiel Division.

In November, 1931, General Arnold assumed command of the First Bombardment Wing at March Field, Riverside, Calif., the largest tactical unit in the West. In 1933, when the First Pursuit Wing was formed to replace the First Bombardment Wing, he assumed command of the new organization.

When President Roosevelt ordered the establishment of the Civilian Conservation Corps, March Field was chosen as one of the large concentration points in this program of utilizing a quarter of a million men for various projects looking to the conservation of the natural resources of this country, and General Arnold was appointed commanding officer of 25 camps.

In the operation of the Air Mail by the Army Air Corps, from February, 1934, to the following May, General Arnold was assigned as Officer in Charge of the Western Zone. This was a much more difficult task than his first assignment in connection with air mail operations, when, in September, 1911, he carried the first air mail in the United States from Nassau Boulevard Airdrome, Long Island, to Hempstead, Long Island, a distance of five miles.

In 1918, when the United States inaugurated the first regular scheduled air mail operation in the world, General Arnold was in direct charge of this activity as part of his duties as Assistant Director of Military Aeronautics.

For his leadership of the flight of ten B-10 Bombing planes from Washington, D.C., to Fairbanks, Alaska, and return, July 19th to August 20, 1934, General Arnold was awarded the Mackay Trophy for the second time in his career as an Army flyer.

On March 1, 1935, General Arnold was assigned as Commanding Officer of the 1st Wing (West Coast) of the General Headquarters Air Force, with headquarters at March Field, and was given the temporary rank of Brigadier-General during the period of this assignment.

General Arnold has the distinction of being one of a few remaining officers in the Air Corps holding the rating known as "Military Aviator." In addition, he holds Expert Aviator Certificate No. 4, and Pilot License No. 29.

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AVIATION PREPAREDNESS PARAMOUNT NEED

In an address of welcome to the First National Intercollegiate Flying Conference held in Washington on April 2nd and 3rd, last, Brigadier-General James E. Chaney, Air Corps, asserting that he considered this conference a most important milestone in the advancement of aviation in the United States, added that the Army Air Corps stands squarely and enthusiastically behind the development of our aviation, whether military, commercial, or sport. "Each of them," he stated, "contributes both directly and indirectly to the advancement of the others and, in so doing, all contribute to our national defense.

Our traditional military policy has been to maintain in peace time a small but highly trained Regular Army, which therefore must be greatly expanded in a major national emergency. The result is that the aviation component of our Army, as it exists today, must also be greatly expanded in a national emergency. That is where commercial and civilian aviation come into the picture and their development, advancement and encouragement in peace time are of the greatest concern to the Air Corps and to the War Department.

A country strong in civil aviation is potentially strong in military aviation. A nation strong in military aviation enjoys a national security that it cannot obtain in any other way, for a strong aviation, by its very existence and its power to retaliate in kind, is the greatest guarantee against demoralizing air attacks upon the great centers of civilian population.

Not only will your organization contribute to our national aviation strength, but also, in the future, from your organization will come the leaders in military, commercial and civilian aviation."

THE NEW AIR CORPS ENGINEERING SCHOOL CLASS

Special Orders of the War Department, recently issued, designated ten Air Corps officers for duty as students at the Engineering School at Wright Field, Dayton, Ohio, for the 1935-1936 course. The officers named below are under orders to report to the Commandant of the Engineering School not later than August 1st, next, viz:

Captain James B. Burwell, Kelly Field, Texas
1st Lt. Frederick R. Dent, Jr., and 1st Lt. Marshall S. Roth, Randolph Field, Texas.
1st Lt. William L. Scott, Jr., Langley Field, Va.
1st Lt. Paul E. Shanahan, Middletown, Pa. Air Depot.
1st Lt. Ralph I. Swofford, Jr., Panama Canal Department. (relieved from temporary rank upon departure from his station).
1st Lt. William T. Colman, Philippines.
2nd Lt. Howard M. McCoy, Selfridge Field.
2nd Lt. Charles K. Moore, San Antonio Air Depot, Duncan Field, Texas.
2nd Lt. Edwin S. Perrin, March Field, Calif.

Captain Burwell is relieved from his temporary rank, effective July 29, 1935.

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ASSIGNMENT OF TACTICAL SCHOOL GRADUATES

Effective upon the completion of their present course of instruction at the Air Corps Tactical School at Maxwell Field, Ala., the Air Corps officers named below have been assigned to stations, as follows:

To Barksdale Field, La.: Captains Lester J. Maitland, Milo McCune, 1st Lieuts. Robert W. Douglass, Jr., 2nd Lieut. Reuben C. Hood, Jr.

To Brooks Field, Texas: Captain Horace S. Kenyon, Jr.

To Hamilton Field, Calif.: Captain Oliver K. Robbins.

To Maxwell Field, Ala.: Captains Ray L. Owens, Samuel C. Skemp, latter officer for duty as a member of the Air Corps Board.

To Mitchel Field, N.Y.: Major Vernon L. Burge, Captain Evers Abbey, 1st Lieut. William A. Matheny.

To Kelly Field, Texas: Captain Clarence E. Crumrine.

To Langley Field, Va.: Captain Ned Schramm.

To Office of the Chief of the Air Corps, Washington, D.C.: Captain Alvan C. Kincaid.

To Selfridge Field, Mich.: 1st Lieut. Robert C. Oliver.

To Wright Field, Ohio: Captains Thomas H. Chapman, Emile T. Kennedy, Rudolph W. Probst, John P. Richter, Stanley U. Umstead.

To Chanute Field, Ill.: 1st Lieut. Donald W. Norwood, for duty as instructor as Air Corps Technical School.

To Barksdale Field, La.: Captain William N. Amis.

To Columbus, Ohio, for duty with Air Corps at Headquarters, Fifth Corps Area: Major William B. Wright, Jr.

NEW INSTRUCTORS AT AIR CORPS TECHNICAL SCHOOL

Five Air Corps officers, under Special Orders of the War Department recently issued, were assigned to duty as instructors at the Air Corps Technical School at Chanute Field, Rantoul, Ill., viz: Captain Oscar F. Carlson, now on duty at the Hawaiian Air Depot; 1st Lieut. Forrest G. Allen, Instructor at the Signal School at Fort Monmouth, N.J., and 2nd Lieuts. Gordon A. Blake, Ivan L. Farman and Charles W. Haas, students at the Signal School.

Captain Carlson is relieved from his temporary advanced rank effective upon his departure from Hawaii.

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CHANGE IN SECOND BOMBARDMENT GROUP COMMANDERS

Effective April 1st, Lieut.-Colonel Willis H. Hale, Air Corps, was relieved from duty as Group Commander of the Second Bombardment Group, Langley Field, Va., and assigned the day following as Executive and Operations Officer of the Second Wing at that station.

Effective April 2nd, Major Charles B. Oldfield, Air Corps, was assigned to duty as Group Commander of the Second Bombardment Group, with the temporary rank of Lieut.-Colonel during the period of this assignment.

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GRADUATES OF COMMAND AND STAFF SCHOOL ASSIGNED

Effective upon the completion of the present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas, the following-named Air Corps officers are assigned to stations, as follows:

Captain Lowell H. Smith to Mitchel Field, N.Y.

Captain John R. Morgan and Major William O. Butler to Randolph Field, Texas, the latter to take the course in heavier-than-air flying at the Primary Flying School.

1st Lieut. Kenneth N. Walker to Hamilton Field, Calif.

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TEMPORARY PROMOTION OF AIR CORPS OFFICERS

Effective March 29, 1935, the following-named Air Corps officers on duty with the 19th Composite Group, Panama Canal Zone, were assigned to the duties indicated, with temporary increased rank, as follows:

Captain William B. Mayer, Supply Officer, to rank of Major.

First Lieuts. Lindsay M. Bawsel, Intelligence and Communications Officer, and James H. Wallace, Assistant Operations Officer, to Captain.

Air Corps officers on duty at the Air Depot in the Panama Canal Department received advanced rank, effective March 30, 1935, as follows:

First Lieuts. Cornelius W. Cousland, Adjutant, and Henry R. Baxter, Engineering Officer, the rank of Captain; 2nd Lieut. Daniel F. Callahan, Jr., Chief Inspector, the rank of First Lieutenant.

BIOGRAPHICAL SKETCHES OF AIR CORPS OFFICERS

It is contemplated publishing from time to time biographical sketches of Air Corps officers as one of the regular features of the News Letter. At the present time it is thought particularly timely to touch upon the careers of Captains Albert W. Stevens and Orvil A. Anderson, Air Corps.

Anticipating that they will be called upon to take part in the forthcoming Stratosphere Flight, sponsored jointly by the National Geographic Society and the Army Air Corps and scheduled to take place next June, these two officers are now hard at work at the Air Corps Materiel Division, Wright Field, Dayton, Ohio, making careful preparations to insure the success of this year's attempt to penetrate the upper air strata to the utmost possible extent.

It will be recalled that Major William E. Kepner, pilot; Captain Orvil A. Anderson, Alternate Pilot and Scientific Observer, and Captain Albert W. Stevens, Scientific Observer, participated in last year's Stratosphere Flight, which terminated abruptly due to the rupture of the fabric of the big balloon, making it necessary for all three of these officers to resort to their parachutes. It is definitely known that Major Kepner will not participate in the forthcoming flight, due to the nature of the duties he is now performing.

CAPTAIN STEVENS

Captain Stevens, one of the foremost aerial photographers in the military service and one of its most hard-working individuals, was born at Belfast, Maine, March 13, 1886. He received the degrees of B.S. and M.S. at the University of Maine.

Enlisting in the Aviation Section, Signal Corps, in January, 1918, he was commissioned a 1st Lieutenant in that branch of the service on February 15, 1918, and was assigned to duty as a student at the School of Aerial Photography at Cornell University, Ithaca, New York.

Upon graduation from this school, he was assigned to duty overseas and placed in command of the 6th Photo Section, in which capacity he displayed exceptional ability flying over the enemy lines and taking aerial photographs of enemy positions. For this work he received two citations commending him for exceptional devotion to duty.

While overseas, he completed all the training necessary for a qualified Bombardment Observer, and he served in that capacity in bombing raids in enemy territory. Shortly before the signing of the Armistice he was appointed Chief Photographic Officer of the Air Service, First Army.

Captain Stevens, while on duty with the 88th Aero Squadron in the Chateau Thierry Sector, volunteered for and accomplished several particularly dangerous and important missions over the enemy lines. He produced among the best aerial oblique photographs made in the United States Air Service, one of his accomplishments being a series of oblique photographs of important points in the area fought over by the First American Army.

He was promoted to the rank of Captain, February 21, 1919.

Upon returning to the United States in August, 1919, Captain Stevens was temporarily assigned to duty in the Office of the Chief of Air Service, following which he served for a short time at Langley Field, Va. Most of his service since the close of the War has been at the Engineering Division of the Air Corps, first at McCook Field, and later at Wright Field, Dayton, Ohio, where he has been engaged in experimental aerial photographic work.

Captain Stevens performed numerous photographic missions in various sections of the United States and has taken aerial photographs of vast stretches of territory. One of the notable photographic missions in his Army career was the taking of aerial photographs of the National Parks in the Great Northwest.

By special permission of the War Department, he accompanied Dr. Hamilton Rice on the latter's exploration tour along the Amazon River in South America during the latter part of 1924 and the early part of 1925.

One of the startling feats performed by him was a parachute jump from a supercharged Martin Bomber flying at an altitude of 24,206 feet, on June 12, 1922.

With Lieut. John A. Macready as pilot of a supercharged Le Pere airplane, which on May 2, 1924, ascended above Dayton to an altitude of 31,540 feet, or nearly six miles, Captain Stevens photographed the greatest area ever included up to that time in a single exposure. Nineteen square miles, covering almost the whole city of Dayton, were shown in the photograph with remarkable clearness, the river, streets, parks and outstanding buildings being easily spotted.

For the best record and performance in connection with flying during the year 1929, Captain Stevens was awarded the Mackay Trophy. On February 27th of that year, with Lieut. Harry A. Johnson as pilot, he made complete and accurate notes of the engineering and meteorological features of an altitude flight to 35,611 feet, a record at that time for a biplace airplane. This data proved of great value to the Air Corps Engineering Division.

On March 3, 1929, on the eve of the inauguration of President Hoover, Captain Stevens, in a standard observation airplane piloted by Lieut. John D. Corkille, made night photographs of the Capitol and

the White House at Washington, D.C. Undaunted by several mishaps earlier in the evening, the pair of flyers kept at work until 10:45, and their efforts were successful. The negatives of the photographs taken were dropped immediately after exposure, picked up by Air Corps officers, and telephotoed to all points of the country.

The climax of his photographic activities in 1929 came when, on a 14000-mile aerial photographic tour of the Northwest, he made a photograph of Mt. Rainier from a distance of 227 miles. Piloted again by Lieut. Corkille, the two spent several months in the summer taking some of the most beautiful scenic photographs ever made. Taking off on August 13th from Eugene, Oregon, and flying over a point well south in Oregon, Captain Stevens, although unable to see with his own eyes many of the mountain ranges and peaks he hoped to include in the long-distance photograph, made careful calculations with the aid of his compass and, pointing his camera in the direction of Mt. Rainier, made the exposure. The result was remarkable, for in the 227-mile picture, not only is Mt. Rainier clearly seen, but also other notable mountain peaks in that region.

In January, 1932, during the course of photographic work performed by the Air Corps for the U.S. Coast and Geodetic Survey, Captain Stevens eclipsed his previous achievement in long-distance aerial photography when, from an altitude of 23,000 feet, from a position 8 miles east of Salinas, Calif., he made a photograph of Mt. Shasta, Calif., a distance of 331.2 miles from the locality where the plane was flying.

Captain Stevens' exploits are numerous. He usually participates in all the principal aerial photographic undertakings initiated by the Air Corps.

In August, 1932, during the eclipse of the sun, Captain Stevens, piloted by Lieut. Charles D. McAllister, made some remarkable photographs of that phenomena and, in addition, contributed valuable data in connection with research work on the cosmic ray.

In 1934, Captain Stevens was awarded the Distinguished Flying Cross for extraordinary achievement while participating in aerial flight. He was a scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight, which took off from the vicinity of Rapid City, South Dakota, July 28, 1934, and landed near Loomis, Nebraska, that same day. He assisted in piloting the balloon to an altitude of 60,613 feet, and in making continuous scientific observations enroute. When the balloon became disabled, through circumstances beyond human control, Captain Stevens did attempt, under most adverse and hazardous conditions, to land successfully the disabled aircraft in order to preserve the scientific records that had been obtained. By the exercise of cool judgment and foresight under these conditions, certain scientific records were saved, and the disabled aircraft was abandoned only when it was clearly evident that not to do so would prove disastrous to human life.

In being forced to abandon the disabled balloon and resorting to his parachute, Captain Stevens became a member of the mythical Caterpillar Club.

CAPTAIN ANDERSON

Captain Orvil A. Anderson is one of a limited number of officers in the Army Air Corps who holds four flying ratings, these being "Airplane Pilot," "Airship Pilot," "Airplane Observer," and "Balloon Observer."

Born at Springville, Utah, May 2, 1895, Captain Anderson attended grammar school high school and college preparatory school in that city, and was a student for one year at the Brigham Young University.

Enlisting in the Aviation Section, Signal Corps, during the War, he served for several months with the 129th Aero Squadron at Kelly Field, Texas, and, in October, 1917, he was transferred to the First Balloon School Squadron at Fort Omaha, Nebraska, where he pursued the course of instruction in ballooning.

From March 22 to May 11, 1918, he took the ground school course at the School of Military Aeronautics, Ohio State University, Columbus, Ohio, and then returned to Fort Omaha, where he completed the course of instruction in Observation, lighter-than-air. He was rated a "Balloon Observer," July 24, 1918; commissioned a 2nd Lieutenant, Aviation Section, Signal Corps. August 23, 1918, and assigned to duty with the 59th Balloon Squadron, Fort Omaha, as Supply Officer and Mess Officer. On January 29, 1919, he was placed in command of the 61st Balloon Company.

Transferred to duty with the 34th Balloon Company at Langley Field, Va., in April, 1919, Captain Anderson completed the course of instruction in airship piloting, and was rated "Airship Pilot," September 1, 1920. During the year 1920, he completed a course of instruction in aerial navigation at the Naval Navigation School at Pensacola, Fla.

In 1922, Captain Anderson was transferred to the Balloon and Airship School at Scott Field, Ill., where he was on duty as Instructor in Terrestrial and Celestial Navigation. In that year he was commended on two occasions by the Chief of the Air Corps for exceptional service; in the first instance for the

creditable manner in which he performed his duties as a member of the crew of the Airship C-2 on its round trip transcontinental flight and, in the second instance, for his skill and courage in successfully landing, with but minor damage, and with no injury to any member of the crew, a pony blimp during the course of a flight from Scott Field to Bynum, Ala. Unable to land the blimp due to unforeseen high wind and motor failure, Captain Anderson successfully effected a rip landing.

Early in 1923, Captain Anderson completed a course in rigid airship training at the Naval Air Station at Lakehurst, N.J.

In 1925, he completed the course in heavier-than-air training at the Primary Flying School at Brooks Field, Texas, and the Advanced Flying School at Kelly Field, San Antonio, Texas, and on Sept. 14th of that year was rated "Airplane Pilot" and "Airplane Observer."

Following his graduation from the Advanced Flying School, Captain Anderson was on duty at this School for several months as Commandant of Cadets, Flying Instructor and Instructor in Observation. He then returned to Scott Field, Ill., for temporary duty for several months. Being due for foreign service, Captain Anderson was transferred to the Philippines and, upon the expiration of his tour in the Islands, he returned to Kelly Field, his present station.

In the latter part of 1933, Captain Anderson was on temporary duty at Langley Field, Va., where he pursued an advanced course in air navigation. He remained at Langley Field for a brief period as an instructor in that subject. In June, 1934, he was assigned as pilot and observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight, which took off from the vicinity of Rapid City, South Dakota, July 28, 1934, and landed near Loomis, Nebraska, that same day. He assisted in piloting the balloon to an altitude of 60,613 feet, and in making continuous scientific observations enroute, and when the balloon became disabled through circumstances beyond human control, did attempt, under most adverse and hazardous conditions, to land successfully the disabled aircraft in order to preserve the scientific records that had been obtained. By the exercise of cool judgment and foresight under these conditions, certain scientific records were saved, and the disabled aircraft was abandoned only when it was clearly evident that not to do so would prove disastrous to human life.

In being forced to abandon the disabled balloon and to resort to the use of his parachute, Captain Anderson became a member of the mythical Caterpillar Club.

AERIAL REVIEW AT SAN ANTONIO ON ARMY DAY

Characterized by the local newspapers as "the greatest military demonstration in the history of San Antonio," Army Day at the Alamo City saw an aerial display in which approximately 150 planes were utilized, followed by a parade of all units of the Second Division from Fort Sam Houston.

Major John K. Cannon, Director of Training at the Air Corps Training Center, was in charge of the Aerial Review in which there were planes from Kelly, Randolph and Brooks Fields. The planes were flown at four different altitudes, with Randolph Field's "USA" formation at the top altitude of 4,500 feet. This same formation was flown during the filming of "The West Point of the Air." Kelly Field planes were flown at 4,000 feet, and those from Brooks Field at 3,000 feet. The flying started at 9:30 a.m.

Kelly and Randolph Fields each dispatched 12 planes on Friday night, April 5th, to give a demonstration of night flying over the city.

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DEATH OF JIMMY COLLINS MOURNED

With the information that Jimmie [illegible] Collins' brilliant career as a pilot had come to a sad finis, many Kelly Field officers recalled the likeable "Jimmie" to mind when he was a classmate of Col. Charles A. Lindbergh, then a Flying Cadet at Kelly Field in the advanced class of September, 1934, both crack pilots graduating on March 14, 1925. Collins specialized in Pursuit at the Advanced Flying School.

Collins, whose specialty had been terminal velocity dives from 20,000 feet, was killed on March 22nd, when his plane during one of those dives crashed near Farmingdale, L.I., New York. He had been testing Navy planes for several days.

It was back in December, 1928, when Collins was making a test flight for the Navy and executing a vertical dive from 11,500 feet that structural failure of the plane made him a member of the Caterpillar Club.

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REVIEW FOR RETIRED NONCOMMISSIONED OFFICER

The entire personnel of Kelly Field participated in a Review on March 30th in honor of Master Sergeant Ernest Cote, 40th Attack Squadron, Air Corps, who was retired after 30 years' honorable service in the Army. His Squadron staged a turkey dinner in his honor.

Master Sgt. Cote, who will make San Antonio his home, enlisted in the Army in December, 1903. He served four years in the Coast Artillery, following which he

transferred to the Signal Corps. In November, 1913, he affiliated himself with the Aviation Section of the Signal Corps, and he has been with the Army's Air Forces ever since. His service includes an assignment to the 1st Aero Squadron, organized twenty years ago, and commanded by Captain Benjamin D. Foulois, now Major General and Chief of the Air Corps.

Through one of those coincidences which happen now and then, General Foulois was present at Kelly Field on a tour of inspection when the ceremonies incident to the retirement of Master Sergeant Cote took place, and they had a chat over old times. The General congratulated the latter upon his well earned retirement.

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THE FIRST WING'S FIRST CONCENTRATION

The first tangible evidence of the formation of the new 1st Wing of the GHQ Air Force appeared on March 22nd, when the new Wing held its first concentration at Hamilton Field, Calif.

Brigadier-General Henry H. Arnold, the Wing Commander, devised a communication problem, combined with a bombardment concentration with accompanying Pursuit protection, with Hamilton Field as the objective. Fifty-one planes of the 17th Attack Group, 12 Bombardment planes of the 19th Bombardment Group at Rockwell Field joined forces with 13 Martin Bombers of the 7th Bombardment Group at Hamilton Field to complete the Wing force as it is now equipped. The communications feature of the problem involved intercommunication between the three Groups as they moved up the coast, employing radio voice.

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POST EXCHANGE ADDITION TO RANDOLPH FIELD

For the consideration of $1.00, the Randolph Field Post Exchange is deeding to the Government a new $7,000 building, which was erected to house the new post exchange concession for auto parts, servicing of cars, and wash rack. Being isolated from San Antonio by 18 miles, this new service to the post personnel fulfills a long felt want.

The Post Exchange Council originally provided an expenditure of $4,000 to erect a building, under the direction of the Constructing Quartermaster. By the time the building was ready for occupancy, however, the Post Exchange found that it had invested in the neighborhood of $7,000.

The building is designed so as to harmonize with the general architectural scheme of the post and, unlike most buildings used for this purpose, it is an attractive addition instead of an eyesore.

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MACKAY TROPHY PRESENTED GENERAL ARNOLD

On April 9th, cloudy, chilly and rainy, a day which brought memories of one 28 years ago (October 9, 1912) on which he made a 41-minute reconnaissance flight from College Park, Md., to Washington Barracks, D.C.; Fort Myer, Va., and return to College Park, and thereby earned the first award of the Mackay Trophy, Brigadier-General Henry H. Arnold, Air Corps, was for the second time in his Army career awarded this Trophy for his leadership of the flight of ten B-10 Martin Bombers from Washington, D.C., to Fairbanks, Alaska, and return, during July and August, 1934.

Due to the absence of Senator William G. McAdoo, President of the National Aeronautic Association, Major James H. Doolittle, Vice President of the Association, flew to Washington from New York in weather which kept most birdmen on the ground, and presented the Mackay Trophy and the gold medal to General Arnold. Because of the inclement weather, the presentation ceremonies were held inside one of the Bolling Field hangars in the presence of a guard of honor, Brigadier-General Oscar Westover, Assistant Chief of the Air Corps; Lieut.-Col. Barton K. Yount; Lieut.-Col. John D. Reardan and Captain E.E. Hildreth, of the Information Division, Office of the Chief of the Air Corps; Captain Charles M. Savage, Acting Commanding Officer of Bolling Field, and other commissioned personnel of the field; Messrs. Wm. Enyart and Ray Cooper, of the National Aeronautic Association, and two representatives of Mr. Clarence H. Mackay, donor of the Trophy.

In turning over the Mackay Trophy to General Westover, who accepted it on behalf of the War Department and made a brief reference regarding its history, and then pinning the gold medal on General Arnold, Major Doolittle said that aviation is not entirely a young man's game any longer and showed that military aviation units should be entrusted to the command of able, experienced flying officers.

General Arnold, in a brief speech of acceptance, recalled incidents connected with his first trophy-winning flight. Dressed in ordinary clothing, not being provided with flying clothes, sitting in the unprotected seat of the early Wright machine and fully exposed to the elements, he said that he had undergone more hardship on this flight than during the entire Alaskan flight of the past summer. He added that when he landed at College Park he was so cold that he could hardly move, and he was carried to the hospital.

General Arnold was present in Washington to testify before a Congressional Committee, and it seems that the presentation ceremony was well timed.

V-6766, A.C.

ENGINEERING SECTION

Equipment Activities:

Instrument Landing Equipment: Parts for the fabrication of Air Corps radio compass locators for the Department of Commerce are on order; fabrication of Air Corps marker beacon projectors for the Department of Commerce has been started. This work is being accomplished at the Materiel Division.

Mounting brackets have been prepared for installing instrument landing equipment in the first instrument landing truck. Drawings are being prepared to accomplish this work in other instrument landing trucks.

Aerial Photographic Equipment.- A representative of the Materiel Division made a tour of the East recently in connection with obtaining aerial photographic data. He visited the Eastman Kodak Company and the Folmer Graflex Corporation, Rochester, N.Y., and obtained engineering data for preparations for Types C-1 and C-2 cameras; the Akeley Camera, Inc., New York City, and obtained data for preparation of specification for Type A-1 camera; the Fairchild Aerial Camera Corporation, Woodside, Long Island, N.Y., re changes necessary on Type K-7C camera recommended by Air Corps photographic activities as result of service test; and Mitchel Field re installation of drying cabinets in Type A-1 dryer. He also visited the Philadelphia Air Transport Company, Norristown, Pa., and examined an experimental automatic film dryer developed by that company. A practical demonstration was made; the dryer seems quite promising. An effort will be made to obtain one of these dryers for experimental test at the Materiel Division.

MATERIALS BRANCH

The Air Corps completed a service test on the comparison of "International Orange" and Yellow No. 4. The former is recommended by the Aeronautics Branch of the Department of Commerce, in Aeronautics Bulletin Nos. 4 and 9, "Regulations Governing Establishment and Certification of Artificial Lights and Recommended Standards for Marking Onstructions to Air Navigation," July 1, 1932, and the latter in Supplement No. 3-2 to U.S. Army Specification.

Tests were made at Randolph Field. The two-color finishes were applied to airplanes, which were viewed from above, when at rest, and while taxying, when in flight against a clear sky, and against clouds. Recommendations were made for aluminum and black, which might be a desirable combination in case protective coatings were discontinued on metal-covered airplanes.

Air Corps "Gigolo."

Vibration tests on the new Materiel Division motor mount are now being conducted. For these tests it is not necessary to run the engine, the vibration being set up by a "Gigolo." A "Gigolo" is defined unofficially in static test circles as "a dancing device which excites response in the body to which it is attached." A further advantage of using a "Gigolo" lies in the fact that the engine under test is cool, is not turning a propeller, and consequently can be observed, felt, and vibration recording instruments applied to any part.

Armament Activities:

Design work is being accomplished in connection with the development of a bomb rack assembly intended for use in Pursuit type airplanes. The rack assembly will be electrically operated and utilized under all conditions of maneuvers approved for this type airplane. The mechanism is being designed in units for each bomb with the idea that units corresponding to the number of bombs required can be installed.

Work is being continued in connection with the development of an adapter assembly for use in mounting two caliber .30 machine guns flexibly. Recent tests of the most promising design have been attended with highly satisfactory results.

FIELD SERVICE SECTION NOTES

Flexible Gun Mounts Requested.

Inquiries were received from both the Artillery and Mechanized Cavalry in regard to the availability of flexible gun mounts against antiaircraft. These arms have been informed that approximately 800 each of the Type A scarf mounts are available from Air Corps stores without transfer of funds, except actual cost of packing, handling and transportation.

While this type of mount is obsolescent for Air Corps use, it appears to be suitable for the above purpose.

Stock List Prepared.

The Materiel Division has just completed a project begun several years ago, that of preparing a complete list of all the items of equipment and supplies stocked by the Air Corps. This "Stock List" has been published in sectional form, a separate section for each class of property. The individual parts of the list will be republished annually to bring them up to date.

This work is one of the most important projects the Field Service Section has attempted since, through this stock list, it has been possible to standardize Air Corps property nomenclature, fix the classification of each item, and to dis-

pose of surplus and obsolete stock. A great quantity of material has been made available for sale and the shelves of the depots and stations consequently cleared of a large amount of inactive material. The reports received in the Materiel Division from all Air Corps stations and depots have been rendered intelligible through the standardization of nomenclature so that the exact location of all property is now known with the result that considerable saving in expenditures for new material is made possible by the utilization of existing stocks.

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GENERAL SIMONDS VISITSAIR CORPS POSTS

Among recent visitors at the Air Corps Tactical School, Maxwell Field, Ala., was Major-General George S. Simonds, Deputy Chief of Staff, who arrived at this station from Pope Field, Fort Bragg, N.C. The General and 1st Lieut. C.K.Gailey, Jr., his aide, were passengers in a C-4A airplane piloted by Captain Hez McClellan, Air Corps. After an overnight stop at Maxwell Field, the flight was continued to Kelly Field, via New Orleans, La.

General Simonds, upon arrival at San Antonio, made a tour of inspection of both Kelly and Randolph Fields in order to familiarize himself with the organization and operation of the Air Corps Training Center.

Major-General B. D. Foulois, accompanied by Captain Harry A. Halverson, also on a tour of inspection of Air Corps posts, and who was in San Antonio at that time, accompanied General Simonds on his tour of the San Antonio fields.

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COOPERATION WITH ANTI-AIRCRAFT

The 63rd Anti-Aircraft Regiment from Fort MacArthur, Calif., is now temporarily encamped at March Field, Calif., for searchlight drill. The 17th Attack Group is flying missions to give them actual airplane targets. Missions are flown for three hours each night at an altitude of 10,000 feet.

In addition to the drill this provides the anti-aircraft personnel, March Field pilots are also using the illuminated airplane fera target to determine the possibility of using anti-aircraft searchlights to illuminate enemy planes in warfare and as to whether our own Pursuit can fire on the illuminated targets without being seen themselves or becoming confused by the lights.

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John Tranum, famous Danish parachute jumper, about to make a delayed jump recently from 30,000 feet, died of heart failure resulting from nerve strain when the plane reached 27,000 feet.

BILL ON PASSIVE DEFENSE FOR FRANCE

Concerning the proposed bill organizing passive defense in France, a report thereon, prepared by M. Gustave Guerin, of the Chamber of Deputies, is briefly as follows:

During the war, aviation was used first in cooperation with the Army and Navy, and later as a new arm, somewhat independent. There were 28 attacks against Paris, during which 25 tons of bombs were dropped.

After the war, aerial danger was so remote that the subject was dropped in France for several years. But this danger exists and is very grave, all the more so as attacks will come either suddenly, or after a very short period of political tension. Theories adopted in foreign countries leave no doubt as to the capital role of aviation in a new conflict and it is even stated that definite results may be obtained by aviation the first days of a war. To this end, aviation will attack objectives of all kinds, if judged important; military, economic and moral; and will use all available means: explosives, incendiary bombs and gas.

International conventions have been drawn up, but it is impossible to stop the manufacture of certain chemicals which, while used in gas warfare, are also important in the chemical, dye and fertilizer industries.

Douhet was in favor of a sudden attack with all available means, without declaration of war. These views are also popular in Germany. Hence, it must be admitted that aviation [illegible] will attack any objective, with all available means, and will carry its attacks all over the territory of a nation.

This means a real danger for civilian populations and adequate measures must be adopted, especially in a country like France, which will always not only avoid but even appear to plan a brusk aggression. This renders France more vulnerable.

Red Cross societies have already devoted their efforts to this question of passive defense, and attempted in numerous meetings to define measures capable of counteracting a bombardment by air. In most European countries, passive defense has been organized. France is slow in this respect.

Studies were carried out and rules laid down. In the instructions of the Ministry of the Interior there are shown the respective duties and responsibilities of the various authorities.

Certain measures have been considered in detail since that time by the High Committee on Passive Defense, an advisory body of the Ministry of the Interior. The general organization of passive defense has thus been contemplated

but cannot be enforced as long as it is not compulsory to abide by the Ministry of the Interior's instructions in the matter. This must be made compulsory by law.

The financial aspect of the question is a delicate one. The High Committee on Passive Defense of the Ministry of the Interior agreed that it was desirable that expenses incurred for passive defense against air attacks should rest on the beneficiaries: administrations, public services, departments, towns, associations and individuals, the Government contributing certain sums only in exceptional cases in the general interest of the nation or in consideration of the particular situation of those concerned.

To be efficient in time of emergency, passive defense must have trained personnel in time of peace, composed of departmental and municipal services to which civilian volunteers will be added. This personnel should be insured against accidents in time of peace as well as against accidents in time of war.

The preparation of passive defense creates new obligations which a law alone can define.

It is also indispensable to give special authority to the Ministry of the Interior to impose certain dispositions, either in the lay-out of towns or construction of buildings, with a view to passive defense.

The above items are the basic principles of the proposed bill on passive defense.

The Chamber of Deputies' Commission did not feel that all expenses should be borne by the interested parties, but only as far as their financial situation would permit; instead of placing the mayors under the authority of the Government, the Commission desires them to act as collaborators. The Commission has amended the bill to that effect and recommends its passage as now drafted.

Article I of the bill makes the organization of passive defense against air danger compulsory over the entire territory.

Article 2 charges the Ministry of the Interior with directing, coordinating, and controlling the organization of passive defense, with the assistance of a High Committee on Passive Defense.

Article 3 shows the duties and responsibilities of public authorities and individual bodies in the preparation of passive defense. This defense in France is the responsibility of the ministries. However, passive defense of the populations is the responsibility.

Article 4 gives authority to the Ministry of the Interior to apply government directives and to enforce measures in connection with industrial decentralization and the dispersion of populations. It also empowers it to increase, through pertinent measures, the capacity for defense of the various communities.

Article 5 provides personnel for passive defense and provision for regulations regarding their respective statutes.

Article 6 deals with the distribution of expenses.

Article 7 provides sanctions for those who do not respect the provisions of article 1 (obligation of passive defense) and article 3 (authorities preparing for it), listing measures which are strictly necessary, whose enforcement must be obtained by the prefects in case the mayors do not attend to it.

Article 8 provides for these exercises which will not perturb public life, only the regular personnel participating and only camouflaging of lights and interruption of circulation in centers where passive defense is being tested out being expected of the civilian populations.

Article 9 concerns administrative measures and provides that special provisions will be adopted for the region of Paris.

Article 10 extends the provisions of the law to the colonies.

Conclusions.

If we compare the situation in France to that in other countries, it must be admitted that France is slow in the organization of its passive defense. If, theoretically, everything has been provided for, practically the education of the population and preparatory measures have only been fractional and disconnected.

At the present time, according to the reaction of the mayors to passive defense, something is done or nothing at all. Hence, everything that must be ready beforehand must be made compulsory. This means that punishment is necessary, not only for responsible authorities, but also for private individuals.

As concerns expenses, certain communities have relied on the Government, but Marshal Petain himself declared that the entire fortune of the nation would not be enough to create an "ideal organization" of passive defense.

The Commission and the Government have prepared, in complete accord, a text which is now being submitted to the Chamber of Deputies and should be voted.

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Attention is invited, in connection with the above proposed legislation, to quoted articles from two French dailies on passive defense against air attacks, which appeared on pages 137 and 138 of the April 1st issue of the News Letter.

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A tailor living at Dalby, 200 miles from Brisbane, Australia, who is a licensed pilot, finds flying to his various customers quicker and cheaper. He hires a plane from a local flying club.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Maxwell Field, Ala.: Major Leslie MacDill, for duty as member of the Air Corps Board, upon completion of present course of instruction at Naval War College, Newport, R.I. - Captain Levi L.Beery, upon completion of tour of duty in Philippine Islands.

To Randolph Field, Texas: 1st Lieut. Ralph E. Holmes, from Crissy Field, for primary flying training, Class of July 1st - Captain James F. Powell, upon completion of present course of instruction at Army Industrial College, for primary flying training.

To Langley Field, Va.: Captains Robert Olds and Ralph H. Wooten, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth,Kans. - Lieut.-Colonel Walter R. Weaver for duty as Chief, Inspection Section, GHQ Air Force,from duty as Procurement Planning Representative, New York City.

To Washington, D.C.: Captain Thomas W. Blackburn, Instructor, 36th Division Aviation, Texas National Guard, Houston, for duty in Office of Chief of National Guard Bureau.

To Philadelphia, Pa.: Captain John M. McCulloch, as Instructor, 28th Division Air Corps, Pa. National Guard, upon completion of course of instruction at A.C. Tactical School.

To Governors Island, N.Y.: Colonel Frank P. Lahm, Military Attache, Paris, France, effective about Sept. 18, 1935, for duty with Air Corps at Hqrs. Second Corps Area.

To Wright Field, Dayton, Ohio: 1st Lieuts. Lawrence C. Craigie and George V. Holloman, upon completion of present course of instruction at Air Corps Engineering School.

To Fort Crockett, Texas: Colonel Theodore A. Baldwin, for duty in connection with recruiting. Previous orders revoked.

To Hawaiian Department: Major John C. McDonnell, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas.

To New York City: Captain Clarence H.Welch, from Langley Field, for duty as Air Corps Procurement Planning Representative.

To Rockwell Air Depot, Calif.: Captain Reuben C. Moffatt, upon completion of present course of instruction at Air Corps Engineering School.

To Middletown, Pa. Air Depot: Captain Harrison G. Crocker and 1st Lieut. Russell E. Randall, upon completion of present course of instruction at Air Corps Engineering School.

To Fairfield, Ohio, Air Depot: 2nd Lieut. John W. Sessums, upon completion of present course of instruction at Engineering School.

To Paris, France: 1st Lieut. Townsend Griffis for duty as Asst. Military Attache for Air to Paris and Spain, from duty in the Office of Assistant Secretary of War.

To U.S. Military Academy, West Point, N.Y.: 1st Lieut. Leonard H. Rodieck, upon completion of present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To Scott Field, Ill.: 1st Lieut. Gerald G. Johnson, upon completion tour of duty in the Philippines.

To Bolling Field, D.C.: Captain William E. Farthing from duty as Instructor at Command and General Staff School.

To Randolph Field, Texas: 1st Lieuts. Hoyt D. Williams and Jacob E. Smart, from Panama. Relieved from temporary rank effective upon date of departure for new assignment; - 1st Lieut. Uzal G. Ent, from Langley Field, to undergo primary flying training.

ORDERS REVOKED: Assignment of 1st Lieut. Fred A. Ingalls from Crissy Field to Fort Bragg, N.C. - Assignment of 1st Lieut. Alva L.Harvey from Langley Field to Philippines.

PROMOTIONS: to 1st Lieutenant: 2nd Lieut.Fred S. Stocks, rank March 9, 1935 - 2nd Lieut. Paul T. Cullen, rank from March 20, 1935.

RELIEVED FROM DETAIL TO AIR CORPS: 2nd Lieut. John J. Stark to 6th Coast Artillery, Fort Winfield Scott, Calif.

RETIREMENT: 1st Lieut. Robert M. Kraft from Letterman General Hospital to his home.

TRANSFERRED TO AIR CORPS; 2nd Lieuts. Paul R. Goven, C.E.; Harry S. Bishop, C.A.C., David N. Crickette, F.A., and Samuel A.Mundell, Infantry, March 20, 1935, with rank from June 13, 1933.

RELIEVED OF TEMPORARY RANK: Major Dixon M. Allison, 24th Pursuit Squadron, and 1st Lieut. Jarred V. Crabb, 29th Pursuit Squadron, effective upon departure from Panama Canal Dept.

CHANGES OF STATION (Addl.): To Office of the Chief of the Air Corps: Major Michael F. Davis, from Hawaiian Department.

To Fort Leavenworth, Kansas: Captain Joseph A. Wilson, for duty with Air Corps Detachment, from duty with Organized Reserves, Richards Field, Kansas City, Mo.

To Randolph Field, Texas: 1st Lieut.Reginald R. Gillespie, from Langley Field, Va.

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CHANGES IN ENLISTED PERSONNEL

Master Sergeant Ernest Cote, placed on the retired list at Kelly Field, Texas, March 31, 1935; First Sergeant Nathan W. Beacher was placed on retired list at Selfridge Field, Mich., same date. Master Sergeant George Stout died at Langley Field, Va., March 18, 1935.

Technical Sgt. Charles Gail was promoted to Master Sgt., March 22, 1935, to fill vacancy caused by death of Master Sgt. Stout. Sgt. Gail is stationed at Rockwell Field, Calif.

Technical Sgt. John Bollinger, Scott Field, Ill., was promoted Master Sergeant, April 1, 1935, to fill vacancy caused by retirement of Master Sgt. Cote.

Staff Sergeant James L. Coulbourn, Bolling Field, D.C., was promoted Technical Sergeant to fill vacancy caused by promotion of Technical Sergeant Gail.

Staff Sergeant George W. Riffil, Hawaiian Dept., was promoted Technical Sergeant to fill vacancy caused by promotion of Tech. Sgt. Bollinger. He was ordered to Scott Field, Ill.

THE DEVELOPMENT OF THE MEDICAL SPECIALTY, AVIATION MEDICINE, AND THE FLIGHT SURGEON

By Major M. C. Grow, Medical Corps, Acting Chief, Medical Division, A.C.

The medical specialty, Aviation Medicine, was an outgrowth of the World War. The early unfortunate experiences of the French, British and Italians with the attendant enormous loss of life and materiel not only in combat but even more so during the period during which the embryo flyer was receiving his training, disclosed the fact that every man was not physically or mentally equipped for military aviation.

It has been learned that the development of certain defects, or conditions which are ordinarily considered as unimportant when found among the personnel of other branches of the service, may render an airplane pilot wholly unfit for the piloting of military aircraft safely. Consequently, there has been evolved more or less gradually a different set of physical requirements for the military aviator.

The military aviator performs his missions in an environment entirely new to mankind. He moves through space at a tremendous rate of speed, and in moving, controls the position of his craft in three dimensions simultaneously. Furthermore, he must constantly make rather quick decisions, and these decisions must practically always be made accurately and correctly. The decisions which he makes depends, primarily and directly on his ability to perceive accurately; and secondarily, to make the proper interpretations of his perceptions.

The idea gradually evolved in the minds of the aviators at the front that there was a great and immediate need for a medical advisor to the commanding officer of the squadron whose duties were the maintenance of physical fitness of each individual aviator of the command. When the United States came into the World War the sad experiences of our Allies were recognized and the government fortunately took steps to avoid similar losses through lack of medical supervision.

It is worthy to note that many of the medical experts made the identical statement, "It is fortunate that the United States is realizing at the beginning that the essential need is for medical advisors whose duty it is to maintain the fitness of each individual aviator". Hence the flight surgeon arose from the demands put upon man by war-time aviation.

In August, 1917, the Chief Surgeon of the Aviation Section of the Signal Corps received detailed information from an officer of the Royal Flying Corps, giving data upon the marked nervous instability that developed among the fighting fliers at the front which showed that nervous instability and breakdown was a greater factor in reducing efficiency than bullets.

A study of the effects of altitude on man by the British showed that this was a causative factor in reducing the fighting power of the squadron on the front. On September 17, 1917, a committee was designated by The Surgeon General of the U.S. Army, and submitted the following propositions:

"1. That the present anti-aircraft guns of the Germans necessitate much flying in high altitudes, 16,000 to 20,000 feet.

2. That these altitudes cause such symptoms from "oxygen want" as to incapacitate men from service.

3. That acclimatization to these altitudes has not as yet succeeded.

4. That artificial oxygen supply is an absolute necessity to enable aviators to work in these altitudes.

5. That different individuals show marked differences in their capacity to withstand high altitudes and it is believed that it will be necessary to institute special examinations of all aviators to determine their ability for high altitude work."

In accordance with the above suggestion, recommendation was made September 26, 1917, by the Chief Surgeon to the Commanding General Air Division, "that a medical research board be appointed to consist of the following officers: Major John B. Watson, Signal Officers' Reserve Corps; and Major Eugene R. Lewis, Major William Wilmer, and Major Edward C. Seibert, all of the Medical Reserve Corps, to report to the Chief Surgeon, Aviation Section, Signal Corps.

After many difficulties a laboratory was established at Hazelhurst Field, Mineola, Long Island, N.Y., called the Medical Research Board of the Aviation Section of the Signal Corps.

In instructing future flight surgeons the first faculty at the Research Laboratory included the following in their curriculum:

1. Selection of the Flier.
2. Classification of the Flier.
3. Maintenance of efficiency.

At first associated with the flight surgeon in his work were physical directors who acted very much in the same capacity as a trained athlete. These physical instructors were later discontinued and the entire burden of the fliers' physical and mental well-being fell on the flight surgeon.

After the War, in 1919, the Regular Army flight surgeons school was established at Mitchel Field. In 1925, the school, now called The School of Aviation Medicine was removed to Brooks Field,

San Antonio, Texas. When the new West Point of the Air, Randolph Field, Texas, the training center of all prospective military aviators, was established in 1931, the school was moved to the new locality where it has continued to function as a teaching and research center in aviation medicine. A faculty of six members, all Regular Army Medical Corps officers and all qualified Flight Surgeons, give courses in physiology, psychology, psychiatry, cardiology, otology, ophthalmology, neurology, and other subjects in their especial relation to aviation medicine.

An extension course and six weeks' practical instruction is open to Medical Corps Reserve and National Guard Medical Officers. A total of 144 Regular Army Medical Corps officers, 129 Medical Corps Reserve, 14 National Guard Medical officers, 30 U.S.Navy officers, and 3 foreign officers have completed the courses and are rated as Flight Surgeons. It is estimated that the number of qualified flight surgeons required for M-Day in case of a national emergency is 945 of which a total of 700 should be Reserve officers.

At the present time 60% to 80% of aircraft accidents are due to pilot error. The errors of omission and commission thus cause a considerable loss of life and destruction of property and should inspire such constructive and preventive measures to improve the record. The trend of thought on the influence of proper medical supervision of aviation personnel is clearly indicated in the recommendations adopted by the Fifth International Congress on Aerial Navigation at the Hague in 1930, extracts from which follow:

"The Fifth International Congress on Aerial Navigation thinks that the aeronautical medical services have become and will become more and more a special and distinct branch of general medicine, and therefore hopes -

"To have aeronautical physicians prepared for the hard task devolving upon them by means of a technical specialization in aerial navigation, and to have them fly at least enough to gain experience which, while not equaling that of pilots, will, nevertheless, enable them to knowingly judge the great physical and moral qualities they must require of navigating personnel and to realize themselves the degree of aptitude required for the normal service of an aviator."

Contribution to the successful progress of aviation must continue to be made in the future as in the past. In this field of endeavor the way must be shown by the services.

AN ODE TO THE FIRST PURSUIT GROUP

It will be recalled that during the winter of 1929-1930, Lieut.-Colonel Royce, then Major, led a flight of the First Pursuit Group, Selfridge Field, Mich., through the Northwest. This flight has since gone down in the records as the "Arctic Patrol."

During that time a stop was made at Helena, Montana. A freshman in the Helena High School by the name of Alice Lee Wood, aged 15, wrote a poem, entitled "The Snowbirds." During the flight of the Provisional Winter Test Group this year, the pilots were presented at a joint session of the Montana State Legislature, and the following poem was read and presented to Col. Royce:

THE SNOWBIRDS

The Army birds have just left town,
They stayed here all last night.
When o'er this town they flew around,
Oh what a marvelous sight.

They left their homes in Michigan
On an endurance flight,
But before they land back home again,
On many fields they'll light.

They are called the Army Snowbirds,
And what a name they take,
When they are flying in the air,
Of what a noise they make.

The pilots all were faithful,
They flew in snow and rain,
But coming into Helena
They saw the sun again.

The Major deserves the honor
For guiding his men to fame,
Risking their lives for their country
They showed that they were game.

When they get back to Michigan,
They'll sure deserve a rest.
Then they'll wait another flight,
Knowing they've done their best.

The U.S. ought to be proud
To have a fleet so grand,
And now when'er they're needed
They'll go out to take their stand.

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On April 5th, Wright Field celebrated the coming of its new Chief, Brig.-Gen. A.W. Robins, formerly Executive of the Materiel Division. A receiving group, headed by Col. Robert Goolrick, Acting Chief of the Division since Gen. Pratt's departure, awaited him, while the official salute of 11 guns boomed forth. Later, all the officers filed into headquarters to offer greetings. It was a welcome home, not a ceremonious reception, and as such the General accepted it, stepping easily and simply into the highly responsible position assigned to him.

V-6766, A.C.